LISTING OF CLAIMS

1. (currently amended) A speech recognition system, comprising:

a features extractor that extracts a multitude of speech features directly from input speech;

a log-linear function that receives the multitude of speech features obtained from the input speech and determines a posterior probability of each of a plurality of hypothesized linguistic units given the extracted multitude of speech features by applying the formula:

$$P(H_j \mid features) = P(w_1^k \mid o_1^T) = \prod_{i=1}^{k} P(w_i \mid w_1^{i-1}, o_1^T),$$

where:

H_j is a jth hypothesis that contains a sequence of word (or other linguist unit) sequence w_1^k = w1w2…wk

i is an *index pointing to the ith word (or unit)*

k is a *number of words (units) in the hypothesis*

T is a *length of the speech signal (e.g. number of frames)*

w_1^k is a sequence of words associated with the hypothesis H_j, and

o_1^T is a sequence of acoustic observations.

with the conditional probabilities represented by a maximum entropy log-linear model:

$$P(w_i \mid w_1^{i-1}, o_1^T) = \frac{e^{\sum_j \lambda_j f_j(w_i, w_1^{i-1}, o_1^T)}}{Z(w_1^{i-1}, o_1^T)},$$

where:

λ_j are parameters of the log-linear model,

f_j are a multitude of features extracted,

and

Z is a normalization factor that ensures that Equation 2 is a true probability (will sum up to 1); and

a search device that analyzes the posterior probabilities determined by the log-linear function to determine a recognized output of unknown utterances.

2. (canceled)

3. (original) The speech recognition system of claim 1, wherein the speech features comprise at least one of asynchronous, overlapping, and statistically non-independent speech features.

4. (original) The speech recognition system of claim 1, wherein at least one of the speech features extracted is derived from incomplete data.

5. (original) The speech recognition system of claim 1, further comprising a loopback.

6. (original) The speech recognition system of claim 1, wherein the features are extracted using direct matching between test data and training data.

7. (currently amended) A speech recognition method, comprising:

extracting a multitude of speech features directly from input speech;

using a log linear function for determining a posterior probability of each of a plurality of hypothesized linguistic units given the extracted multitude of speech features by applying the formula:

$$P(H_j \mid features) = P(w_1^k \mid o_1^T) = \prod_{i=1}^{k} P(w_i \mid w_1^{i-1}, o_1^T),$$

where:

H_j is a jth hypothesis that contains a sequence of word (or other linguist unit) sequence w_1^k = w1w2…wk

i is an *index pointing to the ith word (or unit)*

k is a *number of words (units) in the hypothesis*

T is a *length of the speech signal (e.g. number of frames)*

w_1^k is a sequence of words associated with the hypothesis H_j, and

o_1^T is a sequence of acoustic observations.

with the conditional probabilities represented by a maximum entropy log-linear model:

$$P(w_i \mid w_1^{i-1}, o_1^T) = \frac{e^{\sum_j \lambda_j f_j(w_i, w_1^{i-1}, o_1^T)}}{Z(w_1^{i-1}, o_1^T)},$$

where:

λ_j are parameters of the log-linear model,

f_j are a multitude of features extracted,

and

Z is a normalization factor that ensures that Equation 2 is a true probability (will sum up to 1);, and

determining a recognized output of unknown utterances using the posterior probabilities.

8. (canceled)

9. (original) The speech recognition method of claim 7, wherein the speech features comprise at least one of asynchronous, overlapping, and statistically non-independent speech features.

10. (original) The speech recognition method of claim 7, wherein at least one of the speech features extracted is derived from incomplete data.

11. (original) The speech recognition method of claim 7, further comprising a step of loopback.

12. (original) The speech recognition method of claim 7, wherein the features are extracted using direct matching between test data and training data.

13. (previously presented) The speech recognition system of claim 1, wherein the features are extracted using Gaussian model identities at each time frame.

14. (previously presented) The speech recognition method of claim 7, wherein the extracting of a multitude of speech features comprises using Gaussian model identities at each time frame to identify and extract features.